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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,543	01/15/2002	Andrei Viktorovich Grebennikov	17778	4982

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EXAMINER
NGUYEN, KHAI M

ART UNIT	PAPER NUMBER
2819	

DATE MAILED: 05/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/047,543	GREBENNIKOV ET AL.	
	Examiner	Art Unit	
	Khai M. Nguyen	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 & 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu (US 5,758,269). Wu discloses a switchable power amplifier and a method of operating/using the same (see Fig. 5 and line 10 of column 6 to line 28 of column 7), comprising: a plurality of stages operable in series fashion (column 4, lines 50-53), wherein each of the plurality of stages has its own power output configuration so that for achieving a desired output level (column 4, lines 46-50), for instance, amplifier stage 51 of the amplifier 50 provides four levels (four power states) of amplification to an input signal on line 58 (column 6, lines 12-21) and these power states are selectable by a state determination circuit (57), which coupled to a control port of each of the plurality of stages (as seen in Fig. 5 and line 37 of column 6 to line 16 of column 7).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 5,758,269) in view of King et al. (US 2002/0021169 A1).

Regarding claims 2-3 and 20, Wu discloses the switchable amplifier of claim 1 except for a controllable output impedance matching circuit/network coupled between an output port of an amplifier stage and a load.

King et al. teaches (Figs. 1 & 4) a switchable amplifier having an output matching impedance network/circuit (106/400) having input ports, an output port, and a control port for receiving a control signal from a state determination circuit (108), and being coupled between output ports of an amplifier stage and a load (at terminal 128). The inclusion of the output impedance matching network/circuit in Wu as taught by King et al. would have been obvious because it is known to use an output impedance matching means/circuit to provide the proper output impedance for the operation of an amplifier.

Regarding claims 4-5, Wu teaches each stage of the plurality of stages having at least two switchable power levels/states (see column 6, lines 13-21 and column 7, lines 17-21). Wu only lacks to show each of the plurality switchable amplifier stages (51-53) comprises power devices that connected in parallel.

King et al. teaches (Fig. 1) a switchable power amplifier stage having two power devices/transistors (102, 104) connected in parallel. It would have been obvious to one person having ordinary skill in the art at the time the invention was made to connect the at least two switchable power levels/states of the amplifier stages (51-53) in parallel to provide different power levels/states on different output paths.

Regarding claims 6-8, either the amplifier and switch control unit (57) as taught by Wu or the state determination circuit (108) as taught by King et al. was designed/used for the purpose of selectively controlling/monitoring the plurality of transistor amplifiers of the switchable amplifier and each of these stages may have only two parallel transistor amplifiers.

Regarding claims 9-10, the prior art above discloses the claimed invention except for an input matching circuit and interstage matching circuit. It is known (see the cited reference, for example, Wang et al. US 6,326,849) in the art that when coupling two amplifier stages to form a cascaded amplifier, an interstage-matching network is normally provided/used to connect amplifier stages for the purpose of matching the output/input impedance of the first and second cascaded amplifiers respectively. Wang et al. also discloses an input matching circuit coupled between an input terminal and the first stage. Therefore, the inclusion of the matching networks/circuits in Wu as suggested by Wang et al. would have been obvious because it was used for matching purposes.

Regarding claims 11-12, Wu in view of King et al. teaches the switching amplifier of claim 2, wherein the matching network/circuit (106) *may be implemented* by

multiplicity of different circuits includes a mechanical relay, a single-pole, a SPDT, a FET switch, a diode switch or a combination of inductor, capacitor, and transmission line components (see column 5, lines23-29). It would have been obvious to one person having ordinary skill in the art at the time the invention was made to provide an output impedance matching circuit/network with the use of transmission lines, capacitors and diodes for the same purpose as above.

Regarding claim 13, Wu discloses (Fig. 5) an apparatus for use in a communication device, the apparatus comprising: a plurality of switchable stages connected in series (51-53), wherein each stage having an input port for receiving a data signal, a control port, and an output, and each stages having many selectable power levels/states (column 6, lines 13-21); and a state determination circuit (57) which coupled to the control ports for controlling the operation of the stages. Wu only lacks an output impedance matching circuit/network coupled between an output port of an amplifier stage and a load.

King et al. teaches (Figs. 1 & 4) a switchable amplifier having an output matching impedance network/circuit (106/400) having input ports, an output port, and a control port for receiving a control signal from a state determination circuit (108), and being coupled between output ports of an amplifier stage and a load (at terminal 128). The inclusion of the output impedance matching network/circuit in Wu as taught by King et al. would have been obvious because it is known to use an output impedance matching means/circuit to provide the proper output impedance for the operation of an amplifier.

Regarding claims 14-15, Wu teaches in view of King et al. discloses the claimed invention of claims 14-15 (see the above rejections and Fig. 5, element 28, of Wu and Figs. 1 & 4 of King et al.).

Regarding claims 16-17, Wu teaches each stage of the plurality of stages having at least two switchable power levels/states (see column 6, lines 13-21 and column 7, lines 17-21). Wu only lacks to show each of the plurality switchable amplifier stages (51-53) comprises power devices that connected in parallel.

King et al. teaches (Fig. 1) a switchable power amplifier stage having two power devices/transistors (102, 104) connected in parallel. It would have been obvious to one person having ordinary skill in the art at the time the invention was made to connect the at least two switchable power levels/states of the amplifier stages (51-53) in parallel to provide different power levels/states on different output paths.

Regarding claim 18, either the amplifier and switch control unit (57) as taught by Wu or the state determination circuit (108) as taught by King et al. was designed/used for the purpose of selectively controlling/monitoring the plurality of transistor amplifiers of the switchable amplifier.

Regarding claims 21-22, the methods therein the claimed invention are essentially the same scope as apparatus of the above rejected claims. Therefore, they are similarly rejected.

Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclose.

Oskowsky et al. (US 6,377,117), Wu (US 5,758,269), Wang et al (US 6,326,849), and King et al. (US 6,181,208), King et al. (US 2002/0021169 A1), Heinonen et al. (US 5,530,923), and Mattila et al. (US 5,432,473) disclose relevant art to the claimed invention.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 703-605-4244. The examiner can normally be reached on 8:30 to 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J Tokar can be reached on 703-305-3493. The fax phone numbers for the organization where this application or proceeding is assigned are 703- 308-7724 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-6789.

KN
April 21, 2003

Michael J. Tokar

Michael Tokar
Supervisory Patent Examiner
Technology Center 2800